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Remarks

In the Office Action, the Examiner indicated that claims 26-36, 66-76, and 106-116 are directed to allowable subject matter, rejected claim 1 under 35 U.S.C. § 101, and rejected claims 9, 49, and 125 under 35 U.S.C. § 112, second paragraph. Additionally, the Examiner rejected claims 1-5 and 41-45 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,936,965 to Doshi et al. ("Doshi"); rejected claims 6-12, 20, 23, 40, 46-52, 60, 63, and 80 under 35 U.S.C. § 103(a) as being unpatentable over Doshi in view of U.S. Patent No. 6,414,967 to Van Grinsven et al. ("Van Grinsven"); rejected claims 9, 13, and 53 under 35 U.S.C. § 103(a) as being unpatentable over Doshi, Van Grinsven, and further in view of U.S. Patent No. 6,343,341 to Cabrera et al. ("Cabrera"); rejected claims 14-17, 19, 21, 22, 54-57, 59, 61, 62, 81-85, 94-97, 99, 101, 102, 121-123, 126, and 128-131 under 35 U.S.C. § 103(a) as being unpatentable over Doshi in view of U.S. Patent No. 6,157,644 to Bernstein et al. ("Bernstein"); rejected claims 24, 37, 64, 77, 104, and 117 under 35 U.S.C. § 103(a) as being unpatentable over Doshi, in view of Bernstein, and further in view of U.S. Patent No. 6,271,946 to Chang et al. ("Chang"); rejected claims 25, 38, 65, 78, 105, and 118 under 35 U.S.C. § 103(a) as being unpatentable over Doshi, Bernstein, and Chang, and further in view of U.S. Patent No. 6,643,287 to Callon et al. ("Callon"); rejected claims 39, 79, and 119 under 35 U.S.C. § 103(a) as being unpatentable over Doshi and Bernstein, and further in view of U.S. Patent No. 5,974,458 to Abe et al. ("Abe"); rejected claims 86-92, 100, 103, 120, 127, and 132 under 35 U.S.C. § 103(a) as being unpatentable over Doshi in view of Bernstein and Van Grinsven; rejected claim 93 under 35 U.S.C. § 103(a) as being unpatentable over Doshi in view of Bernstein, Van Grinsven, and Cabrera; rejected claim 98 under 35 U.S.C.

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§ 103(a) as being unpatentable over Doshi and Bernstein and further in view of U.S. Patent No. 5,627,824 to Arnold ("Arnold"); and rejected claims 124 and 125 under 35 U.S.C. § 103(a) as being unpatentable over Doshi and Bernstein, and further in view of U.S. Patent No. 5,909,427 to Manning et al. ("Manning").

By this Amendment, Applicant has amended claims 1, 4, 6, 7, 11-15, 18, 20, 23, 26, 30, 35, 40, 41, 44, 46, 47, 50-55, 57, 58, 60, 63, 66, 80, 81, 82, 86, 87, 88, 90, 93, 94, 95, 98, 100, 103, 106, 127, and 132 to improve form. Support for the amendments to claims 1, 41, and 81 can be found in canceled claims 2, 3, 42, and 43 and at page 19 of the specification. Additionally, claims 2, 3, 9, 42, 43, 49, 83, 89, 91, 120, 124, and 125 have been cancelled. By virtue of their cancellation, the rejection of these claims is obviated.

Without conceding the propriety of the rejection of claim 1 under 35 U.S.C. § 101 or the rejections of claims 9, 49, and 125 under 35 U.S.C. § 112, second paragraph, Applicant submits that these rejections are obviated in view of the amendments to claim 1 and cancellation of claims 9, 49, and 125.

*Rejection of Claims 1-5 and 41-45 Under
35 U.S.C. § 102(b) Based on Doshi*

Independent claim 1, as amended, is directed to a layer 1 frame construction method. The method includes constructing a layer 1 frame header including a priority identifier indicating a priority of a payload of the layer 1 frame, a protocol identifier indicating a priority of data in the payload of the layer 1 frame, the protocol identifier identifying a protocol selected from an STM (Synchronous Transfer Mode) signal, ATM (Asynchronous Transfer Mode) cells, a primary IP (Internet Protocol) packet and a best effort IP packet in a common

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frame format, and a cyclic redundancy check (CRC) identifier indicating a CRC result performed on portions of the frame header including the priority identifier and the protocol identifier, the CRC identifier being used to indicate bit synchronization, byte synchronization, and frame synchronization. The method further includes appending the payload to the constructed layer 1 frame header.

Applicant submits that Doshi does not disclose or suggest each of the elements recited in amended claim 1. Doshi, for example, does not disclose or suggest a frame header including the CRC identifier recited in claim 1, which indicates "a CRC result performed on portions of the frame header including the priority identifier and the protocol identifier, the CRC identifier being used to indicate bit synchronization, byte synchronization, and frame synchronization." Doshi mentions the use of a CRC field. However, the CRC field of Doshi is not performed on portions of the frame header including the priority identifier and the protocol identifier, as recited in claim 1. Additionally, the CRC field of Doshi is not used to indicate, as is also recited in claim 1, bit synchronization, byte synchronization, and frame synchronization.

Regarding CRCs, Doshi generally discloses that CRC can be used "as part of the PACK layer" to generally provide error detection/correction capability. (See Doshi, Fig. 4, element 450 and column 5, lines 52-55). This general disclosure of Doshi relating to a CRC layer, however, in no discloses or suggests the specific implementation of a CRC identifier in a frame header recited in claim 1. That is, Doshi cannot be said to disclose or suggest, as recited in claim 1, a CRC result performed on portions of the frame header including the priority identifier and the protocol identifier, the CRC identifier being used to indicate bit synchronization, byte synchronization, and frame synchronization.

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Canceled claim 3 previously recited features relating to a CRC field. In rejecting claim 3, the Examiner pointed to Fig. 4, portions of column 5, and portions of column 11 of Doshi as disclosing the recitations of previous claim 3. (Office Action, pages 3 and 4). These sections of Doshi generally disclose that a CRC can be used for error detection/correction. Nothing in these sections of Doshi, however, or any other section of Doshi, disclose or suggest, as is recited in claim 1, a CRC result performed on portions of a frame header including the priority identifier and the protocol identifier, the CRC identifier being used to indicate bit synchronization, byte synchronization, and frame synchronization.

For at least these reasons, Doshi does not disclose or suggest each of the features recited in claim 1 and the rejection of this claim should be withdrawn. At least by virtue of their dependency from claim 1, Applicant submits that the rejection of claims 4 and 5 are improper and should also be withdrawn.

Independent claim 41 is directed to a frame construction device and includes layer 1 frame construction means and means for appending the constructed layer 1 frame header to a payload of the layer 1 frame. The layer 1 frame construction means includes, includes, among other things, "a cyclic redundancy check (CRC) identifier indicating a CRC result performed on portions of the frame header including the priority identifier and the protocol identifier, the CRC identifier being used to indicate bit synchronization, byte synchronization, and frame synchronization." Based on rationale similar to that given above, Applicant submits that Doshi does not disclose or suggest each of the features recited in claim 41, and the rejection of this claim should therefore be withdrawn.

At least by virtue of their dependency from claim 41, Applicant submits

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that the rejections of claims 44 and 45 are also improper and should be withdrawn.

*Rejection of Claims 6-12, 20, 23, 40, 46-52, 60, 63, and 80
Under 35 U.S.C. § 103(a) Based on Doshi in view of Van Grinsven*

Claims 6-12, 20, 23, and 40 depend from claim 1. Claims 46-52, 60, 63, and 80 depend from claim 41. Applicant has reviewed Van Grinsven and submit that Van Grinsven does not cure the above-discussed deficiencies of Doshi. Accordingly, for at least the reason, the rejections of these claims are improper and should be withdrawn.

*Rejection of Claims 9, 13, and 53 Under
35 U.S.C. § 103(a) Based on Doshi, Van Grinsven, and Cabrera*

Claim 9 has been cancelled. Applicants have reviewed Cabrera and submit that Cabrera does not cure the above-discussed deficiencies of Doshi and Van Grinsven. Accordingly, for at least this reason, the rejections of claims 13 and 53 are improper and should be withdrawn.

*Rejection of Claims 14-17, 19, 21, 22, 54-57, 59, 61,
62, 81-85, 94-97, 99, 101, 102, 121-123, 126, and 128-131 Under
35 U.S.C. § 103(a) Based on Doshi and Bernstein*

Claims 14-17, 19, 21, and 22 are dependent claims that depend from independent claim 1 and claims 54-57, 59, 61, and 62 are dependent claims that depend from independent claim 41. At least by virtue of their dependency from claims 1 or 41, Applicant submits that the rejections of claims 14-17, 19, 21, 22, 54-57, 59, 61, and 62 are improper and should be withdrawn.

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Independent claim 81, as amended, is directed to a data transfer system including edge nodes and core nodes, wherein an edge node is connected to an STM (Synchronous Transfer Mode) device, an ATM (Asynchronous Transfer Mode) device or an IP (Internet Protocol) router. The edge node includes a layer 1 frame construction means, a layer 1 frame transmission means, and a layer 1 frame separation means, and a data extraction means. The layer 1 frame construction means, for instance, constructs a layer 1 frame which is capable of accommodating data of a protocol that is selected from an STM signal supplied from the STM device, ATM cells supplied from the ATM device, a primary IP packet supplied from the IP router, and a best effort IP packet supplied from the IP router. The layer 1 frame includes a layer 1 frame header that includes a priority identifier indicating a priority of a payload of the layer 1 frame, a protocol identifier for identifying a protocol and indicating a priority of data in the payload of the layer 1 frame, and a cyclic redundancy check (CRC) identifier indicating a CRC result performed on portions of the frame header including the priority identifier and the protocol identifier, the CRC identifier being used to indicate bit synchronization, byte synchronization, and frame synchronization.

In the rejection of claim 81, the Examiner relies on Doshi to allegedly disclose many of the features recited in claim 81, including the recited layer 1 frame construction means. The layer 1 frame construction means recited in amended claim 81, however, recites, among other things, a CRC identifier indicating a CRC result performed on portions of the frame header including the priority identifier and the protocol identifier, the CRC identifier being used to indicate bit synchronization, byte synchronization, and frame synchronization. As previously discussed, although Doshi mentions the use of a CRC field, the CRC

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of Doshi is not performed on portions of the frame header including a priority identifier and a protocol identifier, as recited in claim 1. Additionally, the CRC field of Doshi is not used to indicate, as is also recited in claim 1, bit synchronization, byte synchronization, and frame synchronization.

Applicant submits that Bernstein does not cure this deficiency of Doshi. Accordingly, Doshi and Bernstein, either alone or in combination, do not disclose or suggest each of the elements recited in claim 1, and the rejection of this claim based on Doshi and Bernstein is improper and should be withdrawn.

Dependent claims 82-85, 94-97, 99, 101, 102, 121-123, 126, and 128-131 were also rejected based on Doshi and Bernstein. Applicants submit that the rejection of these claims is also improper and should be withdrawn, at least by virtue of their dependency from claim 81.

Further, claims 82-85, 94-97, 99, 101, 102, 121-123, 126, and 128-131 recite additional features not disclosed or suggested by Doshi and Bernstein, either alone or in combination. Claim 121, for example, further defines claim 81 and recites that "the layer 1 frame transmission means of the edge node transmits the layer 1 frames containing the STM signals to the core node at predetermined time intervals." The Examiner points to column 7, lines 24-40 of Doshi as allegedly disclosing the features of claim 121. This section of Doshi relates to transmission of STM frames and specifically states that each STM frame is 125 microseconds long. This section of Doshi, however, does not disclose or suggest transmitting frames to a core node at predetermined time intervals. Doshi does not mention a core node, much less transmitting to a core node at predetermined time intervals. For at least this reason also, the rejection of claim 121 should be withdrawn.

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*Rejection of Claims 24, 37, 64, 77, 104, and 117 Under
35 U.S.C. § 103(a) Based on Doshi, Bernstein, and Chang*

Claims 24, 37, 64, 77, 104, and 117 are dependent claims that each indirectly depend from one of independent claims 1, 41, and 81. Applicants submit that Chang does not cure the above-mentioned deficiencies of Doshi and Bernstein. For at least this reason, the rejection of these claims is improper and should be withdrawn. In addition, these claims recite additional features not disclosed by the cited art.

Claim 24, for example, recites "wherein in the case where the primary IP packet is packed in the layer 2 frame payload, the layer 2 frame header includes: a route label as information which is used for the routing of the layer 1 frame containing the primary IP packet through relaying nodes; and a flow label as information which is used for designating a wavelength to be used for transferring the layer 1 frame containing the primary IP packet between relaying nodes."

In rejecting this claim, the Examiner concedes that Doshi and Bernstein do not disclose the flow label recited in claim 24. The Examiner contends that Chang discloses this feature and that it would have been obvious to modify Doshi and Bernstein in view of Chang to obtain the features of claim 24. (Office Action, page 17).

Chang is directed to an optical layer survivability and security system using optical label switching and high-speed optical header generation and detection. (Chang, Title). The Examiner points to various portions of columns 7, 8, and 11 to disclose the features recited in claim 24. Applicant has reviewed these sections of Chang, and submit that neither these sections of Chang, nor

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any other sections of Chang, disclose or suggest, as is recited in claim 24, a flow label as information which is used for designating a wavelength to be used for transferring the layer 1 frame containing the primary IP packet between relaying nodes.

Accordingly, Applicant submits that Doshi, Bernstein, and Chang, either alone or in combination, do not disclose or suggest the features of claim 24, and, for this reason also, the rejection of this claim should be withdrawn. Claims 37, 64, 77, 104, and 117 recite features similar to those recited in claim 24, and accordingly, the rejection of these claims is also improper and should be withdrawn.

*Rejection of Claims 25, 38, 65, 78, 105, and 118 Under
35 U.S.C. § 103(a) Based on Doshi, Bernstein, Chang, and Callon*

Claims 25, 38, 65, 78, 105, and 118 are dependent claims that each indirectly depend from one of independent claims 1, 41, and 81. Applicant submits that Callon does not cure the above-mentioned deficiencies of Doshi, Bernstein, and Chang. For at least this reason, the rejection of these claims is improper and should be withdrawn.

*Rejection of Claims 39, 79, and 119 Under
35 U.S.C. § 103(a) Based on Doshi, Bernstein, and Abe*

Claims 39, 79, and 119 are dependent claims that each indirectly depend from one of independent claims 1, 41, and 81. Applicant submits that Abe does not cure the above-mentioned deficiencies of Doshi and Bernstein. For at least this reason, the rejection of these claims is improper and should be withdrawn.

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*Rejection of Claims 86-92, 100, 103, 120, 127, and 132 Under
35 U.S.C. § 103(a) Based on Doshi, Bernstein, and Van Grinsven*

Claims 86-92, 100, 103, 120, 127, and 132 are dependent claims that each indirectly depend from independent claim 81. Applicants submit that Van Grinsven does not cure the above-mentioned deficiencies of Doshi and Bernstein. For at least this reason, the rejection of these claims is improper and should be withdrawn.

*Rejection of Claim 93 Under 35 U.S.C. § 103(a) Based
on Doshi, Bernstein, Van Grinsven, and Cabrera*

Claim 93 indirectly depends indirectly from claim 81. Applicants submit that Cabrera does not cure the above-mentioned deficiencies of Doshi, Bernstein, and Van Grinsven. For at least this reason, the rejection of claim 93 is improper and should be withdrawn.

*Rejection of Claim 98 Under 35 U.S.C. § 103(a) Based
on Doshi, Bernstein, and Arnold*

Claim 98 indirectly depends indirectly from claim 81. Applicants submit that Arnold does not cure the above-mentioned deficiencies of Doshi and Bernstein. For at least this reason, the rejection of claim 98 is improper and should be withdrawn.

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Conclusion

In view of the foregoing amendments and remarks, Applicant respectfully requests the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 CFR 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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